

**DETAILED ACTION**

1. Applicant's arguments filed 12/9/09, with respect to the rejection(s) of claim(s) in the nonfinal office action mailed 6/9/09 have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of a newly cited reference. Because this amendment was not necessitated by applicant's amendment, it is made NONFINAL.

***Claim Rejections - 35 USC § 103***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

4. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein

were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

5. **Claims 1-4, 6-8, and 14-16,21-24** are rejected under 35 U.S.C. 103(a) as being unpatentable over **U.S. Patent No. 5,494,004 to Hunter, Jr.** ("Hunter") (previously cited) in view of **U.S. Patent No. 4,149,757 to Meisel, Jr** ("Meisel")(newly cited).

**In particular, in regard to at least claim 1 and 14**, Hunter shows an apparatus for cleaning a surface within a vessel (interior surface of vessel wall 83), the apparatus comprising: an elongate combustion conduit (21 and 51) extending from an upstream end to a downstream end with an aperture (81) in a wall of a vessel (83) and positioned to direct a shock wave toward the surface (see abstract and note pulsed pressure waves and col. 6, lines 38-54); and a plurality of moveable supports (each of supports 153R, 151R, 155 and 153F, 151F, 155) supporting weight of the combustion conduit (at least portion 51) at a plurality of location along a length of the combustion conduit (note multiple locations in Fig. 1). This apparatus in Hunter is considered to form the recited "industrial facility" of claim 14.

**In regard to at least claim 6**, the supports are considered to accommodate longitudinal expansion and/or contraction of the combustion conduit as recited, in the same manner as applicant's invention.

**In regard to at least claims 7 and 8**, the multiple legs, axles, and wheels of Hunter form at least one platform (131) which is clearly understood to form a trolley. Further, as the sections (51 and 21) are reasonably considered to form the recited combustion conduit, this trolley (131) serves to support at least one of the combustion conduit segments (51). The recitation that the combustion conduit comprises a plurality of separable segments that are each supported on one of a plurality of trolleys is considered met by simply duplicating the detonative cleaning assembly, show for instance in Fig. 1 of Hunter where each assembly is at least arranged adjacent another, for instance by adding another trolley (51) under the second conduit segment (21). In doing so, the collection assemblies would form the apparatus for cleaning a surface within a vessel including an elongate combustion conduit as formed by the collective combustion conduits of the assemblies. It has been held that mere duplication of parts has not patentable significance unless a new and unexpected result is produced. See MPEP 2144.04(VI)(B). Accordingly, in this case, merely duplicating the cleaning assembly of Hunter would be expected to provide for additional means for cleaning the interior of walls of the vessel (83).

Hunter does not disclose a resilient member resiliently restraining the combustion conduit against recoil forces (claims 1 and 14) nor the particular arrangement and structure of the resilient member (claims 2-4, 15-17, 21, 23, and 24).

Meisel is cited to remedy the deficiencies in Hunter.

Meisel discloses a tension spring (22) engaged with a sliding component (20) to return the sliding component (20) to its original position (see Figure 2).

Therefore, in regard to claims 1-4, 6-8, and 14-16,21-24, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the cleaning apparatus of Hunter to incorporate the resilient restraining mechanism as suggested by Meisel, for the desirable purpose of providing an automatic recoil mechanism to return the unit to its original position (col. 1 lines 64-68).

Regarding claims 2-4,15,16,21,23 and 24 Meisel teaches that the tension spring is coupled on one end to a fixed support (23), and the other end is mounted onto the device to be restrained (20). When adapting the Hunter apparatus to include a spring as taught by Meisel, it would have been obvious to use the wall as the fixed support to allow the spring to expand in only one direction.

Regarding claims 23 and 24, the vertical supporting surface shown between elements 23 and 22 in figure 1 is regarded as the claimed strap.

6. **Claims 9,17-20** is rejected under 35 U.S.C. 103(a) as being unpatentable over **Hunter in view of U.S. Patent No. 4,149,757 to Meisel, Jr ("Meisel")** as applied to claims 1 and 14 above and further in view of **U.S. Patent No. 4,218,016 to Freund ("Freund")**.

Hunter in view of Meisel teach substantially all the limitations of claims 9 and 17-20 with the exception of the recitation that the plurality of supports comprise a plurality of hangers. Hunter also does not disclose that the vessel being cleaned is a boiler or includes surfaces formed by a boiler tube bundle.

Freund teaches a retractable cleaning device for the surfaces of boiler tubes (see abstract) that is considered analogous to applicant's invention and the cited prior art. In

Freund, the cleaning device is formed by a moveable support (12) that, in lieu of a trolley assembly, is supported by multiple hanging roller assemblies (30 and 20). This hanging assemblies function to insert and retract lance tube (12) from the boiler (see at least col. 2, lines 25-44).

Therefore, in regard to claim 9, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to substitute the hanging roller assemblies taught in Freund for the trolley arrangement of Hunter as matter of simply substituting one movement mechanism for another for obtain the predictable result of advancing and retracing a cleaning device from a vessel.

### ***Conclusion***

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sarah Suereth whose telephone number is (571)272-9061. The examiner can normally be reached on Mondays & Tuesdays 8:00AM-4:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steven McAllister, can be reached (571) 272-6785. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only.

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/Sarah Suereth/

Examiner, Art Unit 3749

/Steven B. McAllister/

Supervisory Patent Examiner, Art Unit 3749